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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/738,390	12/17/2003	Young-June Yu	ITDE-PNV100US	8003
23122	7590	09/01/2005	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			LEE, PATRICK J	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/738,390	Applicant(s) YU, YOUNG-JUNE	
	Examiner Patrick J. Lee	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to amendment dated July 13th, 2005.

Drawings

2. The drawings were received on 7/15/2005. These drawings are acceptable.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-3, 5, 7, & 16 are rejected under 35 U.S.C. 102(a) as being anticipated by US 6,646,249 B2 to Bird.

With respect to claim 1, Bird discloses a device comprising: pixels (P0-P7) as a plurality of electron sensing elements for receiving energy from an energy receiving source; routing devices (50a-50d) comprising transistors (52, 54) as a plurality of switching elements connected between respective pixels (P0-P7); and photodiodes (26) as charge collection elements. Routing devices (50a-50d) are actuated such that amplifiers (40a, 40b) can collect energy from neighboring pixels (P1, P2) through actuation of routing device (50a) via signal (CS0).

With respect to claim 2, Bird discloses device as an imaging sensor with pixels.

With respect to claim 3, Bird discloses the sensing elements to be disposed in rows and columns (see abstract).

With respect to claim 5, Bird discloses pixel elements (P0-P7).

With respect to claim 7, Bird discloses the use of photodiodes (26).

With respect to claim 16, Bird discloses a device comprising: pixels (P0-P7) as a plurality of electron sensing elements for receiving energy from an energy receiving source; routing devices (50a-50d) comprising transistors (52, 54) for providing each of the electron sensing elements with a plurality of switching elements connected between respective pixels (P0-P7); and photodiodes (26) as charge collection elements. Routing devices (50a-50d) are operated such that amplifiers (40a, 40b) can collect energy from neighboring pixels (P1, P2) through actuation of routing device (50a) via signal (CS0).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 6, 8-9, 11-12, & 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,646,249 B2 to Bird.

Bird discloses the device as described in the discussion of claims 1-3, 5, 7, & 16.

With respect to claim 4, the use of an electron sensing planar pad, but such would be obvious to one of ordinary skill in the art because the pad would allow for a spatial determination of the distribution of light.

With respect to claim 6, the use of time cycle controlled transistors is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art

because such would have allowed the imaging device to receive signals from particular pixels at intervals of time.

With respect to claims 8-9, Bird does not explicitly disclose the use of the device in a progressive scan or a snapshot pseudo-interlace mode. However, such would have been obvious to one of ordinary skill in the art in order to grant the device versatility and improved readout ability with greater resolution.

With respect to claims 11-12 & 17-18, the modified Bird does not explicitly disclose the use of a correlated double sampling element, but such would have been obvious to one of ordinary skill in the art because such an element would improve the signal-to-noise (S/N) ratio by removing static fixed noise and several types of temporal noise from the sensor's output.

7. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,875,093 to Koishi et al in view of US 6,646,249 B2 to Bird.

With respect to claim 13, Koishi et al disclose an imaging device comprising photocathode (18), MCP (23), high-speed light receiving device (30) as an imaging device, and display device (33). However, Koishi et al do not explicitly disclose an imaging device (30) comprising a plurality of switching elements and a plurality of electron sensing elements. Such is disclosed by Bird, as Bird discloses a device comprising: pixels (P0-P7) as a plurality of electron sensing elements for receiving energy from an energy receiving source; routing devices (50a-50d) comprising transistors (52, 54) as a plurality of switching elements connected between respective pixels (P0-P7); and photodiodes (26) as charge collection elements. Routing devices

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(50a-50d) are actuated such that amplifiers (40a, 40b) can collect energy from neighboring pixels (P1, P2) through actuation of routing device (50a) via signal (CS0). The combination of teachings by Koishi et al with those of Bird would have been obvious as the combination would allow the device to isolate individual pixels. (see Bird abstract).

With respect to claim 14-15, the modified Koishi et al do not explicitly disclose the use of a correlated double sampling element, but such would have been obvious to one of ordinary skill in the art because such an element would improve the signal-to-noise (S/N) ratio by removing static fixed noise and several types of temporal noise from the sensor's output.

Response to Arguments

8. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJL
August 25th, 2005

Patrick J. Lee
Examiner
Art Unit 2878



Stephone B. Allen
Primary Examiner